

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/011373

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> F04B27/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> F04B27/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Toroku Jitsuyo Shinan Koho	1994-2004
Kokai Jitsuyo Shinan Koho	1971-2004	Jitsuyo Shinan Toroku Koho	1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 8-28447 A (Toyoda Automatic Loom Works, Ltd.), 30 January, 1996 (30.01.96), Full text; Figs. 1 to 6 (Family: none)	1-6
Y	JP 2003-3954 A (Sanden Corp.), 08 January, 2003 (08.01.03), Par. No. [0009]; Fig. 1 (Family: none)	1-6
Y	JP 2003-42065 A (Toyota Industries Corp.), 13 February, 2003 (13.02.03), Par. No. [0007]; Fig. 1 & US 6679077 B2 & US 2003019227 A1 & DE 102333894 A1	6

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
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- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search  
15 October, 2004 (15.10.04)Date of mailing of the international search report  
02 November, 2004 (02.11.04)Name and mailing address of the ISA/  
Japanese Patent Office

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CD-ROM of the specification and drawings annexed to the request of Japanese Utility Model Application No. 17625/1993 (Laid-open No. 76659/1994) (Sanden Corp.), 28 October, 1994 (28.10.94), Par. Nos. [0014] to [0018]; Figs. 1 to 4 (Family: none)	1-5